

BT/CT Standing Minutes: May 19, 2006

AGENDA:

1. Electron Microscopy Training Summary
 2. BioWatch Enhancement Status
 3. CT Update
 4. Status of Hand-held Assay Testing
 5. SARS testing
 6. Upcoming Influenza Pandemic Exercise
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1. **Electron Microscopy (EM) training:** (Dr. R. Konomi, S. Hennigan)

Dr. Raimond Konomi and Scott Hennigan trained at the Duke University Medical Center EM laboratory from May 15- May 17th. Dr. Sara Miller, a worldwide expert in EM, provided the training. Her protocols were the starting point for the current LRN CDC protocol.

Grid preparation

Grids are coated with a pure Formvar film, and then stabilized with carbon coating. The carbonization helps attract the virus to the grid. Some laboratories have specialized equipment so they can carbonize their own grids.

Sample Collection

Scott and Raimond have learned to identify the dull versus the shiny side of the grid. Samples collected from lesions are ideal because the virus is concentrated in that area. It is important to titer the sample out on different grids to obtain an optimal concentration. Too much overlapping virus will cause a shadow image, and result in the inability of identification.

Staining

The training covered the ability to distinguish between bad and good staining. Negative staining with uranyl acetate and phosphotungstic acid were discussed. Uranyl acetate provides consistent staining, as well as an ability to store stained slides for a number of months at room temperature.

Distinguishing of Pox Viruses

Scott and Raimond learned how to determine if a virus belongs to, or does not belong, to the family of pox viruses. They also learned how to distinguish organelles from viruses. Pictures taken of the viruses during the training will be sent to Raimond and Scott.

Next Steps:

- The grids from our SLI smallpox kits are out of date, and will need to be replaced. When SLI purchases new grids they will get them coated (possibly by Duke University Medical Center, or Harvard School of Public Health). The grids will undergo QA/QC and be tested under the HSPH Electron Microscope. The shelf-life of the grids will be monitored.
- Raimond and Scott may send CDC suggestions on how to improve the existing LRN protocol for users that may not have the expertise of Dr. Miller's laboratory.
- Additional BT staff, who have been vaccinated, will be cross-trained on EM.

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- A refresher course on sample collection will be developed.

2. BioWatch enhancement status: (Dr. S. Smole)

The filter holders (plumbobs) on all the air samplers have been replaced with a new filter holder. The filters are now placed into the cylindrical holder, instead of locked in. There is concern that while opening the new devices under the hoods, that the filter(s) may fly off. Upcoming enhancements include:

- Next week LRN messenger 2.0 will be installed.
- Global secure staff will be installing version 3.0 BioWatch LIMS.
- Lawrence Livermore equipment will arrive in the middle of June. Scanning barcodes on samples tubes may enable the chain of custody to track the specimen as it moves from hood to hood, rather than just from lab to lab.

3. CT Update: (J. Nassif)

Emergency Response Exercise Scenario: Early Monday morning in Augusta, ME, an incident occurred. Shots were fired and there was a fire on site. Residents/responders experienced burning eyes, lungs and blisters. A viscous, yellow liquid was found. The CDC response team traveled to ME to pick up specimens and transport them back to the CDC. The samples were analyzed and exposure was attributed to Lewissite.

The CDC elected to monitor Lewissite exposure in individuals by measuring arsenic using ICP-MS. As a surge capacity laboratory for the CDC, Massachusetts was asked to analyze 10 urine samples for arsenic.

- The BT 24/7 phone was not activated; all information was e-mailed to Julie Nassif.
- There may be difficulties in entering a clinical sample into the current BCTIS database.

LC-MS-MS instrument training: CT staff have been trained onsite on the Liquid Chromatograph-Mass Spectrometer-Mass Spectrometer (LC-MS-MS). In June, lab staff will be sent for training at the vender's location. In September, two CT staff will attend an analyte specific nerve agent training in Atlanta at the CDC. Additional training is scheduled for July at a cost of 9,100 dollars for a 4-day intensive theoretical and software-based training.

4. Status of Hand-Held Assay Screening: (Mariah)

A news source incorrectly reported that a sample collected from the Newton Post Office incident had tested negative using a rapid test by first responders. It will be 6-9 months before State HazMat teams begin using the RAMP HHA's to screen "white powders" and once they do start they will only be screening for ricin toxin and *Bacillus anthracis*.

Cheryl has been meeting with David Ladd, Steve Clendenin and Tom O'Connell every 6 weeks to develop standard operating procedures that would cover the following:

1. RAMP training for HazMat technicians

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- a. Annual competency on RAMP
2. Field screening vs. sample screening
 - a. What should be performed
3. When to use the RAMP (no risk, low risk, high risk specimens)
4. What to do with the results

Once these protocols are developed, they will all need to be reviewed by AI and others before HHA testing begins.

6. SARS testing:

SLI will no longer be testing samples for Severe Acute Respiratory Syndrome (SARS). The SARS PCR reagents at SLI have been destroyed and a 'record of device disposition' will be sent to CDC by May 23rd. Raimond has validated and turned in the EIA reagents used for SARS serologic testing.

As of now, all samples that require SARS testing will be sent to CDC.

7. Influenza Pandemic Exercise:

A full-scale exercise is being planned for the fall that will test laboratory and epidemiology procedures for triaging, receiving, testing and reporting out a large volume of specimens. In addition to the mock specimens, packages, paperwork and data management, there may be a select agent component.

8. Other Items:

Lab directors have been e-mailed the list of upcoming Massachusetts 1st Civil Support Team-WMD events. Julie Nassif will determine if the Edgewood Chemical Biological Center Training dates work well for her staff.